

Name \_\_\_\_\_ Period \_\_\_\_\_

### Study Guide: Storms and Weather

1. A disturbance in the earth's atmosphere that involves lightning and thunder is called a \_\_\_\_\_ and is associated with \_\_\_\_\_ clouds.
2. The movement of liquids or gases in a spiral around a central axis is called a \_\_\_\_\_.
3. A violent windstorm that spirals around a rotating column of air of intense low pressure that moves in a narrow path over land is called a \_\_\_\_\_.
4. A \_\_\_\_\_ is communication to the public that a tornado has been seen by someone or detected by radar, while a \_\_\_\_\_ is communication to the public that tornadoes are possible.
5. A massive rotating storm that forms north of the equator in the Atlantic Ocean, eastern Pacific Ocean, or Caribbean Sea when warm air rises over tropical waters is called a \_\_\_\_\_.
6. A hurricane can affect a much larger region than a \_\_\_\_\_, and hurricane season is from \_\_\_\_\_ to \_\_\_\_\_.
7. The center of a hurricane that has rising temperatures, low winds, no rainfall, low pressure, and a bright sky is called the \_\_\_\_\_, but the ring of spiraling clouds and thunderstorms that whirl around the center, carrying heavy precipitation and strong winds is called the \_\_\_\_\_.
8. A massive rotating storm that forms in the Indian Ocean and off the coast of Australia is called a \_\_\_\_\_, while a massive rotating storm that forms north of the equator in the western Pacific Ocean is called a \_\_\_\_\_.
9. \_\_\_\_\_ includes the day-to-day variations in temperature, air pressure, wind, humidity, and precipitation, while \_\_\_\_\_ refers to the average temperature and precipitation conditions of a region over time.
10. The transfer of heat energy  
from one material to another through direct contact \_\_\_\_\_  
from one object to another without the space between them being heated \_\_\_\_\_  
through a fluid, such as air or water \_\_\_\_\_
11. The earth is surrounded by a blanket of air that absorbs energy from the sun called the \_\_\_\_\_.
12. 78% of the atmosphere is made of \_\_\_\_\_, 21% is made of \_\_\_\_\_, and the remaining 1% is made of other trace gases.
13. Which layer of the atmosphere contains the ozone layer?
14. Which layer of the atmosphere starts at the Earth's surface and extends about 15km, is the most dense, and is where the weather is located?

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15. Northern lights occur in the \_\_\_\_\_ layer of the atmosphere and meteoroids burn up in the \_\_\_\_\_.

16. The \_\_\_\_\_ starts at the top of the thermosphere and extends to space, is mostly hydrogen and helium, and is where most satellites orbit.

17. Temperature drops as you climb higher in the \_\_\_\_\_ and \_\_\_\_\_ but temperature increases as you climb higher in the \_\_\_\_\_ and \_\_\_\_\_.

18. The \_\_\_\_\_ separates the stratosphere from the mesosphere, and the \_\_\_\_\_ separates the troposphere from the stratosphere.

19. The mesopause separates the mesosphere from the \_\_\_\_\_, and the \_\_\_\_\_ exists in the lower thermosphere between 80km and 280km.

20. The force that air exerts on everything on Earth is called \_\_\_\_\_.

21. As altitude increases, atmospheric pressure \_\_\_\_\_.

22. The unit of pressure that describes a force over a given area is called a \_\_\_\_\_, and the instrument used to detect and measure changes in air pressure is called a \_\_\_\_\_.

23. The amount of water vapor in the air is called \_\_\_\_\_ and the temperature at which water vapor begins to condense at a constant barometric pressure is called \_\_\_\_\_.

24. Which holds more moisture, warm or cold air?

25. In order for clouds to form, \_\_\_\_\_ and **temperature** need to be close to each other. Also, \_\_\_\_\_ **pressure** usually leads to clouds and precipitation.

26. \_\_\_\_\_ are boundaries that form when air masses meet that have different temperature, pressure, and humidity conditions. \_\_\_\_\_ fronts move fast and \_\_\_\_\_ fronts move more slowly.

27. A/an \_\_\_\_\_ front occurs when two air masses move close to one another, but neither has enough force to move the other, and a/an \_\_\_\_\_ front occurs when a cold and a cool air mass collide with a warm air mass, which becomes trapped and lifted between them.

28. A blue triangle represents a \_\_\_\_\_ front, and a red semicircle represents a \_\_\_\_\_ front. "H" represents \_\_\_\_\_, and "L" represents \_\_\_\_\_.

29. Weather moves from \_\_\_\_\_ to \_\_\_\_\_ across the United States.

30. EXPLAIN each step of the water cycle

1. Evaporation = \_\_\_\_\_
2. Warm air \_\_\_\_\_ because \_\_\_\_\_
3. The air \_\_\_\_\_ and cold air \_\_\_\_\_
4. Condensation = \_\_\_\_\_
5. Clouds form when \_\_\_\_\_
6. Precipitation forms and it takes \_\_\_\_\_
7. Precipitation lands and can then do what 3 things?